

**DETAILED ACTION*****Specification***

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.
2. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.
3. The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.
4. The abstract of the disclosure is objected to because it may exceed 150 words. Correction is required. See MPEP § 608.01(b).

***Claim Objections***

5. Claim 1 is objected to because of the following informalities: Regarding Claim 1, the period in the antepenultimate line should be replaced with a comma. Appropriate correction is required.
6. Claims 5 and 19 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Regarding Claim 5, it is unclear how this claim, which requires that the first medium be an aqueous medium, is

further limiting since the first medium in previous Claim 1 is characterized as containing water and being basic. Regarding Claim 19, it is unclear how this claim, which requires drying of the synthetic layer, is further limiting since the second method in previous Claim 1 already requires drying in a specific temperature range.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:
  8. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
  9. Claims 1-19, 27, 34, and 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
10. Regarding Claim 1, it is unclear what is meant by the phrase "further comprises drying said synthetic resin layer." The so-called "second method" forms a "synthetic resin layer" by application of electric current to a medium containing a resinous ingredient. Hence, it is unclear whether the claimed "drying" is a curing step or a drying step that drives off medium solvent. The Specification suggests that the claimed step is a curing step. See Specification (pages 6, line 14; and page 53, lines 1 and 2). However, the plain meaning of the words and the fact that the "second method" already characterizes formation of the synthetic resin layer upon which the drying step is to be performed suggest that drying may be not to

cure but to drive off medium solvent. Analogous rejection applies to Claim 19.

11. Regarding Claim 5, it is unclear what medium is being claimed. For a basic pH, as required by Claim 1, it would be expected that the medium must be aqueous. Hence, it is unclear what is being claimed. Does this claim require all solvent to be water?

12. Regarding Claims 8, 17, and 18, it is unclear what is meant by the phrase “optionally.” It is unclear what are the claimed concentration range in Claims 8 and 17 and the claimed thickness range in Claim 18. It is unclear what is optional. Is the “optionally” phrase further limiting, or is it superfluous?

#### ***Claim Rejections - 35 USC § 102***

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

14. A person shall be entitled to a patent unless –
15. (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
16. (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
17. (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

18. Claim 36 is rejected under 35 U.S.C. 102(b) as being anticipated by

Heimann et al. USPN 6,153,080 for the reasons of record in the Office

Action mailed on 29 August 2006.

19. Claim 36 is rejected under 35 U.S.C. 102(a and e) as being anticipated by

Heimann et al. USPN 6,322,687 for the reasons of record in the Office

Action mailed on 29 August 2006.

### ***Claim Rejections - 35 USC § 103***

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1,

148 USPQ 459 (1966), that are applied for establishing a background for

determining obviousness under 35 U.S.C. 103(a) are summarized as

follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

22. Claims 1-19, 27, 34, and 35 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Heimann et al. USPN 6,153,080 in view of Jerabek et

al. USPN 3,922,253. Heimann et al. '080 teaches immersion coating a

galvanized steel substrate with a silicate solution and then electro-coating the resulting silicate coating with cathodically applied blocked isocyanate epoxy coating. See Heimann et al. '080 (Figure 2; col. 3, lines 33-40; col. 4, line 31 through col. 5, line 6; col. 8, lines 5-25; col. 8, line 44 through col. 9, line 50; and col. 23, line 34 through col. 24, line 24). Since the silicate solutions of Heimann et al. '080 are comparable to those of applicant and since those of applicant possess basic pH, it would be expected that the silicate solutions of Heimann et al. '080 would inherently possess basic pH. Blocked isocyanate is a cross-linking agent. Heimann et al. '080 does not teach the claimed curing step. Jerabek et al. teaches that compositions such as those of Heimann et al. are typically cured at elevated temperatures such as in the claimed drying temperature range. See Jerabek et al. (Abstract; col. 1, lines 8-42; col. 5, lines 58-63; col. 6, lines 62-68; and col. 7, line 9 through col. 10, line 20). It would have been obvious to one of ordinary skill in the art at the time of the invention to form the coating of Heimann et al. '080 by curing at the claimed temperature range since Jerabek et al. suggests that compositions such as those of Heimann et al. '080 are effectively cured at temperatures in the claimed range. Regarding Claim 15, Heimann et al. '080 may not teach the pH of the second medium, but Jerabek et al. teaches that electrocoat compositions are effective when they possess the claimed pH. It would have been obvious to one of ordinary skill in the art at the time of the invention to fabricate the electrocoat of Heimann et al. '080 with a

medium having the claimed pH since Jerabek et al. suggests the electrocoat compositions having pH values in the claimed range are effective.

23. Claims 1-19, 27, 34, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heimann et al. USPN 6,322,687 in view of Jerabek et al. USPN 3,922,253. Heimann et al. '687 teaches immersion coating a galvanized steel substrate with a basic solution comprising silicate and then electro-coating the resulting silicate coated surface with an organic polymer material. See Heimann et al. '687 (col. 4, lines 21-28; col. 9, lines 18-44; and col. 24, line 40 through col. 25, line 7). The article "Electrocoating or E-Coat" (Reference U on the PTO-892 of the Office Action mailed on 3 March 2006) teaches that provision of an E-coat involves forming a medium with resinous ingredient and applying a current to the medium in a manner that the surface to be coated serves as an electrode. Blocked isocyanate is a cross-linking agent. Heimann et al. '687 does not teach the claimed curing step. Jerabek et al. teaches that compositions such as those of Heimann et al. '687 are typically cured at elevated temperatures such as in the claimed drying temperature range. See Jerabek et al. (Abstract; col. 1, lines 8-42; col. 5, lines 58-63; col. 6, lines 62-68; and col. 7, line 9 through col. 10, line 20). It would have been obvious to one of ordinary skill in the art at the time of the invention to form the coating of Heimann et al. '687 by curing at the claimed temperature range since Jerabek et al. suggests that compositions such

as those of Heimann et al. '687 are effectively cured at temperatures in the claimed range. Regarding Claim 15, Heimann et al. 687 may not teach the pH of the second medium, but Jerabek et al. teaches that electrocoat compositions are effective when they possess the claimed pH. It would have been obvious to one of ordinary skill in the art at the time of the invention to fabricate the electrocoat of Heimann et al. '687 with a medium having the claimed pH since Jerabek et al. suggests the electrocoat compositions having pH values in the claimed range are effective.

***Response to Amendment***

24. Applicant's amendments and arguments are satisfactory for overcoming the section 112, second paragraph rejection of the Office Action mailed on 29 August 2006, except as repeated above for the reasons given above.

25. In view of applicant's amendments and arguments, applicant traverses the section 102 rejections over Heimann et al. '687 and the section 102 rejection over Heimann et al. '080 of the Office Action mailed on 29 August 2006. Applicant has not specifically traversed rejections over Claim 36. Rejections of Claim 36 are maintained. Except for rejection over Claim 36, rejections based on this prior art are revised in view of applicant's amendments and reconsideration of the prior art.

***Conclusion***

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael La Villa whose telephone

number is (571) 272-1539. The examiner can normally be reached on Monday through Friday.

27. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

28. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael La Villa/  
Michael La Villa  
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